Title: Sensory Difficulties in Individuals with Fragile X Syndrome

Authors: Melissa Raspa (RTI International), Anne Edwards (RTI International), Jacek Kolacz (UNC Chapel Hill and Indiana University), Stephen Porges (UNC Chapel Hill and Indiana University)

Introduction: Abnormal sensory processing is considered to be one of the core characteristics of the fragile X phenotype and is well documented in the literature (Frankland, 2004). Moreover, studies of brain structure have shown several regions that are enlarged in individuals with fragile X syndrome (FXS), which are critical in regulating many cognitive and behavioral functions, such as memory and learning, information and sensory processing, and social and emotional behavior (Hessl et al., 2004). The BBC Scales, based on Polyvagal Theory (Porges, 2007; 2009), were recently developed to measure sensory difficulties. This poster will examine the use of the BBC Scales in individuals with FXS.

Method: Online survey of 256 parents of individuals with FXS. The majority of respondents are mothers who are Caucasian (90%), have a 4-year college degree or graduate degree (60%), and are married (83%). Individuals with FXS ranged in age from 5 to 59, with a mean age of 23.3 (11.1 SD). Participants completed the BBC Sensory Scales, a 59-item Likert-type scale (1=Almost Always, 4=Almost Never) comprised of 4 subscales that assessed auditory processing, visual processing, tactile processing, and eating and feeding behavior. A selection algorithm determined which child in the family the respondent completed the survey on. Mean scores were calculated for each of the items, as well as subscale scores across items within each domain.

Results: Item means revealed the biggest sensory challenges were in the auditory processing, tactile processing, and eating and feeding behavior subscales. with the lowest mean scores for difficulty following verbal instruction when other noise present (2.16), resists food with certain textures (2.75), avoids certain tastes (2.78), distressed by fingernail cutting (2.85), and insists on removing labels or tags from clothes (2.86). Visual processing difficulties occurred infrequently. Paralleling these findings, parents reported that auditory processing and feeding and eating behaviors interfered the most with daily functioning. Confirmatory factor analyses and factors associated with sensory difficulties, including age, autism status, will also be discussed.

Discussion: The BBC Sensory Scales has the potential to be a powerful clinical tool that can be used to identify specific areas of sensory dysregulation in patients and to contribute to the development of novel targeted interventions.

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